

AIR INDUCTION SYSTEM HAVING INLET VALVE

Abstract

An air induction system (10) for use with an internal combustion engine (E) including an intake is disclosed. The system (10) includes a supercharger (12) and a valve assembly. The valve assembly comprises a valve (14) and a valve control mechanism (16). The supercharger (12) receives air through a supply opening (18), pressurizes it, and discharges it through an exhaust opening (20). The valve (14) is in communication with the supply opening (18) to control air supply thereto. The control mechanism (16) is coupled to the valve (14) and causes it to vary the air supply to the opening (18) in response to air pressure conditions downstream from the supercharger (12). In one embodiment, the control mechanism (16) varies the air supply responsive to air pressure in the intake in order to both throttle the supercharger (12) as well as substantially eliminate undesirable surge conditions therein. In another embodiment, the control mechanism (118) varies the air supply responsive to air pressure in the inlet (110) of a turbocharger (106) to provide supercharged air thereto at a

substantially constant pressure.